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In the claims:*Please amend claims 114-121, 141, and 142.**Please cancel claims 74-89, 91, 93, 95, 97, 99-104, 106, 108, 110, 112, and 120-140.**Please add new claims 143-166.***1-113. Cancelled**

114. **(Currently amended)** A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity~~, comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or an antigen-binding portion thereof, that dissociates from human TNF $\alpha$  with a  $K_d$  of  $1 \times 10^{-8}$  M or less and a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, both determined by surface plasmon resonance, and neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an  $IC_{50}$  of  $1 \times 10^{-7}$  M or less.

115. **(Currently amended)** A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity~~, comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or antigen-binding portion thereof, with the following characteristics:

- a) dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, as determined by surface plasmon resonance;
- b) has a light chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 3, or modified from SEQ ID NO: 3 by a single alanine substitution at position 1, 4, 5, 7 or 8 or by one to five conservative amino acid substitutions at positions 1, 3, 4, 6, 7, 8 and/or 9;
- c) has a heavy chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 4, or modified from SEQ ID NO: 4 by a single alanine substitution at position 2, 3, 4, 5,

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6, 8, 9, 10 or 11 or by one to five conservative amino acid substitutions at positions 2, 3, 4, 5, 6, 8, 9, 10, 11 and/or 12.

116. (Currently amended) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity~~, comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or an antigen binding portion thereof, with a light chain variable region (LCVR) comprising the amino acid sequence of SEQ ID NO: 1 and a heavy chain variable region (HCVR) comprising the amino acid sequence of SEQ ID NO: 2.

117. (Currently amended) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity~~, comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is D2E7.

118. (Currently amended) A method for treating a subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity~~, comprising administering to the subject an antibody such that the periodontal disease disorder is treated, wherein the antibody is an isolated human antibody, or an antigen-binding portion thereof, that dissociates from human TNF $\alpha$  with a  $k_d$  of  $1 \times 10^{-8}$  M or less and a  $k_{off}$  rate constant of  $1 \times 10^{-3} \text{ s}^{-1}$  or less, both determined by surface plasmon resonance, and neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an  $IC_{50}$  of  $1 \times 10^{-7}$  M or less.

119. (Currently amended) A method for treating a subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity~~, comprising administering to the subject an antibody such that the periodontal disease disorder

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is treated, wherein the antibody is an isolated human antibody, or antigen-binding portion thereof, with the following characteristics:

- a) dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $1 \times 10^{-3} \text{ s}^{-1}$  or less, as determined by surface plasmon resonance;
- b) has a light chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 3, or modified from SEQ ID NO: 3 by a single alanine substitution at position 1, 4, 5, 7 or 8 or by one to five conservative amino acid substitutions at positions 1, 3, 4, 6, 7, 8 and/or 9;
- c) has a heavy chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 4, or modified from SEQ ID NO: 4 by a single alanine substitution at position 2, 3, 4, 5, 6, 8, 9, 10 or 11 or by one to five conservative amino acid substitutions at positions 2, 3, 4, 5, 6, 8, 9, 10, 11 and/or 12.

120. (Currently amended) A method for treating a subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity,~~ comprising administering to the subject an antibody such that the periodontal disease disorder is treated, wherein the antibody is an isolated human antibody, or an antigen binding portion thereof, with a light chain variable region (LCVR) comprising the amino acid sequence of SEQ ID NO: 1 and a heavy chain variable region (HCVR) comprising the amino acid sequence of SEQ ID NO: 2.

121. (Currently amended) A method for treating a subject suffering from periodontal disease ~~a disorder in which TNF $\alpha$  activity is detrimental, wherein the disorder is selected from the group consisting of periodontal disease, obesity, and radiation toxicity,~~ comprising administering to the subject an antibody such that the periodontal disease disorder is treated, wherein the antibody is D2E7.

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141. (Currently amended) A method for treating a subject suffering from rheumatoid arthritis, comprising administering to the subject both an antibody and methotrexate, such that the rheumatoid arthritis is treated, wherein the antibody is an isolated human antibody, or an antigen-binding portion thereof, that dissociates from human TNF $\alpha$  with a  $K_d$  of  $1 \times 10^{-8}$  M or less and a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, both determined by surface plasmon resonance, and neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an IC $_{50}$  of  $1 \times 10^{-7}$  M or less.

142. (Currently amended) A method for treating a subject suffering from rheumatoid arthritis, comprising administering to the subject both an antibody and methotrexate such that the rheumatoid arthritis is treated, wherein the antibody is D2E7.

143. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from obesity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or an antigen-binding portion thereof, that dissociates from human TNF $\alpha$  with a  $K_d$  of  $1 \times 10^{-8}$  M or less and a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, both determined by surface plasmon resonance, and neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an IC $_{50}$  of  $1 \times 10^{-7}$  M or less.

144. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from obesity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or antigen-binding portion thereof, with the following characteristics:

a) dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, as determined by surface plasmon resonance;

b) has a light chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 3, or modified from SEQ ID NO: 3 by a single alanine substitution at position 1, 4, 5, 7 or 8 or by one to five conservative amino acid substitutions at positions 1, 3, 4, 6, 7, 8 and/or 9;

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c) has a heavy chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 4, or modified from SEQ ID NO: 4 by a single alanine substitution at position 2, 3, 4, 5, 6, 8, 9, 10 or 11 or by one to five conservative amino acid substitutions at positions 2, 3, 4, 5, 6, 8, 9, 10, 11 and/or 12.

145. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from obesity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or an antigen binding portion thereof, with a light chain variable region (LCVR) comprising the amino acid sequence of SEQ ID NO: 1 and a heavy chain variable region (HCVR) comprising the amino acid sequence of SEQ ID NO: 2.

146. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from obesity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is D2E7.

147. (New) A method for treating obesity in a subject suffering from obesity comprising administering to the subject an antibody such that obesity is treated, wherein the antibody is an isolated human antibody, or an antigen-binding portion thereof, that dissociates from human TNF $\alpha$  with a  $K_d$  of  $1 \times 10^{-8}$  M or less and a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, both determined by surface plasmon resonance, and neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an  $IC_{50}$  of  $1 \times 10^{-7}$  M or less.

148. (New) A method for treating obesity in a subject suffering from obesity comprising administering to the subject an antibody such that obesity is treated, wherein the antibody is an isolated human antibody, or antigen-binding portion thereof, with the following characteristics:

a) dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, as determined by surface plasmon resonance;

b) has a light chain CDR3 domain comprising the amino acid sequence of SEQ

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ID NO: 3, or modified from SEQ ID NO: 3 by a single alanine substitution at position 1, 4, 5, 7 or 8 or by one to five conservative amino acid substitutions at positions 1, 3, 4, 6, 7, 8 and/or 9;

c) has a heavy chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 4, or modified from SEQ ID NO: 4 by a single alanine substitution at position 2, 3, 4, 5, 6, 8, 9, 10 or 11 or by one to five conservative amino acid substitutions at positions 2, 3, 4, 5, 6, 8, 9, 10, 11 and/or 12.

149. (New) A method for treating obesity in a subject suffering from obesity comprising administering to the subject an antibody such that obesity is treated, wherein the antibody is an isolated human antibody, or an antigen binding portion thereof, with a light chain variable region (LCVR) comprising the amino acid sequence of SEQ ID NO: 1 and a heavy chain variable region (HCVR) comprising the amino acid sequence of SEQ ID NO: 2.

150. (New) A method for treating obesity in a subject suffering from obesity comprising administering to the subject an antibody such that obesity is treated, wherein the antibody is D2E7.

151. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from radiation toxicity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or an antigen-binding portion thereof, that dissociates from human TNF $\alpha$  with a  $K_d$  of  $1 \times 10^{-8}$  M or less and a  $K_{off}$  rate constant of  $1 \times 10^{-3}$  s $^{-1}$  or less, both determined by surface plasmon resonance, and neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an IC $_{50}$  of  $1 \times 10^{-7}$  M or less.

152. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from radiation toxicity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or antigen-binding portion thereof, with the following characteristics:

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a) dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $1 \times 10^{-3} \text{ s}^{-1}$  or less, as determined by surface plasmon resonance;

b) has a light chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 3, or modified from SEQ ID NO: 3 by a single alanine substitution at position 1, 4, 5, 7 or 8 or by one to five conservative amino acid substitutions at positions 1, 3, 4, 6, 7, 8 and/or 9;

c) has a heavy chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 4, or modified from SEQ ID NO: 4 by a single alanine substitution at position 2, 3, 4, 5, 6, 8, 9, 10 or 11 or by one to five conservative amino acid substitutions at positions 2, 3, 4, 5, 6, 8, 9, 10, 11 and/or 12.

153. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from radiation toxicity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is an isolated human antibody, or an antigen binding portion thereof, with a light chain variable region (LCVR) comprising the amino acid sequence of SEQ ID NO: 1 and a heavy chain variable region (HCVR) comprising the amino acid sequence of SEQ ID NO: 2.

154. (New) A method for inhibiting human TNF $\alpha$  activity in a human subject suffering from radiation toxicity comprising administering to the human subject an antibody such that human TNF $\alpha$  activity in the human subject is inhibited, wherein the antibody is D2E7.

155. (New) A method for treating radiation toxicity in a subject suffering from radiation toxicity comprising administering to the subject an antibody such that radiation toxicity is treated, wherein the antibody is an isolated human antibody, or an antigen-binding portion thereof, that dissociates from human TNF $\alpha$  with a  $K_d$  of  $1 \times 10^{-8} \text{ m}$  or less and a  $K_{off}$  rate constant of  $1 \times 10^{-3} \text{ s}^{-1}$  or less, both determined by surface plasmon resonance, and neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an  $IC_{50}$  of  $1 \times 10^{-7} \text{ m}$  or less.

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156. (New) A method for treating radiation toxicity in a subject suffering from radiation toxicity comprising administering to the subject an antibody such that radiation toxicity is treated, wherein the antibody is an isolated human antibody, or antigen-binding portion thereof, with the following characteristics:

a) dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $1 \times 10^{-3} \text{ s}^{-1}$  or less, as determined by surface plasmon resonance;

b) has a light chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 3, or modified from SEQ ID NO: 3 by a single alanine substitution at position 1, 4, 5, 7 or 8 or by one to five conservative amino acid substitutions at positions 1, 3, 4, 6, 7, 8 and/or 9;

c) has a heavy chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 4, or modified from SEQ ID NO: 4 by a single alanine substitution at position 2, 3, 4, 5, 6, 8, 9, 10 or 11 or by one to five conservative amino acid substitutions at positions 2, 3, 4, 5, 6, 8, 9, 10, 11 and/or 12.

157. (New) A method for treating radiation toxicity in a subject suffering from radiation toxicity comprising administering to the subject an antibody such that radiation toxicity is treated, wherein the antibody is an isolated human antibody, or an antigen binding portion thereof, with a light chain variable region (LCVR) comprising the amino acid sequence of SEQ ID NO: 1 and a heavy chain variable region (HCVR) comprising the amino acid sequence of SEQ ID NO: 2.

158. (New) A method for treating radiation toxicity in a subject suffering from radiation toxicity comprising administering to the subject an antibody such that radiation toxicity is treated, wherein the antibody is D2E7.

159. (New) The method of claim 141, wherein the isolated human antibody, or antigen-binding portion thereof, dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $5 \times 10^{-4} \text{ s}^{-1}$  or less.

160. (New) The method of claim 141, wherein the isolated human antibody, or antigen-binding portion thereof, dissociates from human TNF $\alpha$  with a  $K_{off}$  rate constant of  $1 \times 10^{-4} \text{ s}^{-1}$  or less.



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161. (New) The method of claim 141, wherein the isolated human antibody, or antigen-binding portion thereof, neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an IC<sub>50</sub> of  $1 \times 10^{-8}$  M or less.

162. (New) The method of claim 141, wherein the isolated human antibody, or antigen-binding portion thereof, neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an IC<sub>50</sub> of  $1 \times 10^{-9}$  M or less.

163. (New) The method of claim 141, wherein the isolated human antibody, or antigen-binding portion thereof, neutralizes human TNF $\alpha$  cytotoxicity in a standard *in vitro* L929 assay with an IC<sub>50</sub> of  $1 \times 10^{-10}$  M or less.

164. (New) The method of claim 141, wherein the isolated human antibody, or antigen-binding portion thereof, is a recombinant antibody, or antigen-binding portion thereof.

165. (New) A method for treating a subject suffering from rheumatoid arthritis, comprising administering to the subject both an antibody and methotrexate, such that the rheumatoid arthritis is treated, wherein the antibody is an isolated human antibody, or antigen-binding portion thereof, with the following characteristics:

- a) dissociates from human TNF $\alpha$  with a K<sub>off</sub> rate constant of  $1 \times 10^{-3}$  s<sup>-1</sup> or less, as determined by surface plasmon resonance;
- b) has a light chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 3, or modified from SEQ ID NO: 3 by a single alanine substitution at position 1, 4, 5, 7 or 8 or by one to five conservative amino acid substitutions at positions 1, 3, 4, 6, 7, 8 and/or 9;
- c) has a heavy chain CDR3 domain comprising the amino acid sequence of SEQ ID NO: 4, or modified from SEQ ID NO: 4 by a single alanine substitution at position 2, 3, 4, 5, 6, 8, 9, 10 or 11 or by one to five conservative amino acid substitutions at positions 2, 3, 4, 5, 6, 8, 9, 10, 11 and/or 12.

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166. (New) A method for treating a subject suffering from rheumatoid arthritis, comprising administering to the subject both an antibody and methotrexate, such that the rheumatoid arthritis is treated, wherein the antibody is an isolated human antibody, or an antigen binding portion thereof, with a light chain variable region (LCVR) comprising the amino acid sequence of SEQ ID NO: 1 and a heavy chain variable region (HCVR) comprising the amino acid sequence of SEQ ID NO: 2.